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In re Application of:

YAMASHITA ET AL.

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For: PROGRAM-GUIDE-DISPLAY CONTROLLING APPARATUS AND TELEVISION RECEIVER

VERIFICATION OF A TRANSLATION

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Assistant Commissioner for Patents
Washington, DC 20231

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That I am knowledgeable in the English language and in the Japanese language and believe the attached English translation to be a true and complete translation of the certified copy of Japanese application number Hei. 8-147034, filed on June 10, 1996.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and

further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, and that such will full false statements may jeopardize the validity of the application or any patent issued thereon.

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[Title of the Invention]

PROGRAM-GUIDE-DISPLAY CONTROLLING APPARATUS AND TELEVISION RECEIVER

[Number of claims] 5

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[Indication of Fee]

[Deposit Account NO.] 007386

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[Article Name] Specification 1

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[Article Name] Abstract 1

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SPECIFICATION

[Title of the Invention]

PROGRAM-GUIDE-DISPLAY CONTROLLING APPARATUS AND TELEVISION RECEIVER

[CLAIMS]

[Claim 1]

A program-guide-display controlling apparatus for displaying a plurality of program guides on a display unit in a matrix form by using one of the ordinate and the abscissa as a channel number axis and another one as a time axis, comprising:

setting means for allowing an arbitrary time zone to be set by a user; and

discriminatingly displaying means for effecting display to discriminate the time zone set by the user and other time zones.

[Claim 2]

The program-guide-display controlling apparatus according to claim 1, wherein said discriminatingly displaying means causes a region corresponding to the time zone set by the user and a region corresponding to the other time zones to be displayed in different colors in a display region in which the plurality of program guides are displayed.

[Claim 3]

The program-guide-display controlling apparatus according to claim 1 or 2, wherein said setting means allows the starting time and the ending time of an arbitrary time zone to be set by the user.

[Claim 4]

The program-guide-display controlling apparatus according to claim 1 or 2, wherein setting means allows the starting time and the ending time of an arbitrary time zone to be set for each day of the week by the user.

[Claim 5]

A television receiver comprising: the program-guide-display controlling apparatus according to any one of claims 1, 2, 3 and 4.

[Detailed Description of the Invention]

[0001]

[Technical Filed]

The present invention relates to a program-guide-display controlling apparatus for displaying a program guide necessary for selecting a program desired by a user from a plurality of channels in a television broadcasting, and a television receiver.

[0002]

[Background of the Invention]

In the digital satellite broadcasting system (DSS) which has been put to commercial use in the United States, a

multiplicity of more than 150 channels are available, and very numerous programs are being provided. In this system, guide information on programs which are presently being broadcast and programs which will be broadcast in the future is transmitted at predetermined time intervals together with primary program data. A user-side terminal has a function of displaying a program guide screen (program guide table) on the basis of the program guide information.

[0003]

As shown in Fig. 8, a partial program guide table of an entire program guide table E corresponding to the entire program guide information received is displayed as a program guide screen on the user-side terminal. A plurality of program guides are displayed on the program guide screen in a matrix form by using the ordinate as a channel number axis and the abscissa as a time axis. In this example, programs on five channels for a period of two hours and a half are displayed on the program guide screen. At the left end, channel numbers are displayed in a vertical arrangement. Frames which indicate the time zones of programs which are broadcast on the respective channels are displayed in rows corresponding to the respective channels, and titles (A to P) are displayed in the respective frames.

[0004]

On the program guide screen, a cursor for designating

a program or scrolling the program guide screen appears. The movement of this cursor is effected by operating any of the four cursor movement keys provided for the left, right, upward and downward directions. Each time a cursor movement key for the upward or downward direction is operated, the cursor is moved in a unit of channel. Also, each time a cursor movement key for the left or right direction is operated, the cursor is moved in a unit of predefined time.

[0005]

Programs which are provided in the DSS include no-charge programs which can be viewed free of charge if the user pays a system utilization fee, including a charge for subscribing to the DSS, a basic fee, and the like, as well as chargeable programs for which fees are charged separately from the system utilization fee. In addition, the chargeable programs include those which the user purchases in advance in units of channels, and those for which fees are charged only when the programs are viewed (PPV: pay per view).

[0006]

To view a PPV program, a procedure for purchase must be taken on the television screen before the program is started or when that program is being broadcast. To purchase a PPV program, a PPV program to be purchased is selected from a program guide table displayed on the television screen shown in Fig. 8. Then, since a purchase procedure screen is displayed,

a purchase procedure is taken in accordance with the instructions on the screen.

[0007]

[Problems that the Invention is to Solve]

By the way, time zones during which users can view television programs and time zones during which users wish to view television programs are generally fixed for each user. For this reason, broadcast time zones of PPV programs which are purchased by subscription by users are also generally fixed for each user. Accordingly, it will be convenient if time zones during which users wish to view television programs can be set for each user, and as for a program guide on programs which are broadcast during the set time zone, the user is able to recognize that the program guide is the program guide on programs which are broadcast during the time zone set by the user.

[0008]

An object of the present invention is to provide a program-guide-display controlling apparatus and a television receiver in which as for a program guide on programs which are broadcast during the time zone set by the user, the user is able to recognize that the program guide is the program guide on programs which are broadcast during the time zone set by the user.

[0009]

[Means for Solving the Problems]

According to this invention, there is provided a program-guide-display controlling apparatus for displaying a plurality of program guides on a display unit in a matrix form by using one of the ordinate and the abscissa as a channel number axis and another one as a time axis, comprising setting means for allowing an arbitrary time zone to be set by a user, and discriminatingly displaying means for effecting display to discriminate the time zone set by the user and other time zones.

[0010]

The discriminatingly displaying means causes a region corresponding to the time zone set by the user and a region corresponding to the other time zones to be displayed in different colors in a display region in which the plurality of program guides are displayed.

[0011]

The setting means allows the starting time and the ending time of an arbitrary time zone to be set by the user, or allows the starting time and the ending time of an arbitrary time zone to be set for each day of the week by the user.

[0012]

In the program guide display controlling apparatus according to this invention, since display is provided to discriminate the time zone set by the user and other time zones, it is possible to recognize at a glance the program guide on

programs which are broadcast during the time zone set by the user. Accordingly, the purchase and the like by subscription of PPV programs which are broadcast during the time zone set by the user can be facilitated.

[0013]

A television receiver according to this invention comprises the program guide display controlling apparatus.

[0014]

[Mode for Carrying Out the Invention]

Referring now to the drawings, a description will be given of an embodiment in a case where the present invention is applied to the digital satellite broadcasting system (DSS) which has been put to commercial use in the United States.

[0015]

[1] Configuration of user-side terminal

[0016]

Fig. 1 shows a configuration of a user-side terminal.

[0017]

A combination of a television receiver and a program-guide-display controlling apparatus, or a television receiver incorporating a program-guide-display controlling circuit is used as the user-side terminal. The user-side terminal has a CPU 6 for controlling the overall user-side terminal. The CPU 6 has a storage device 9 for storing its program and necessary data. An operation unit 5 comprising a

remote controller or the like is connected to the CPU 6. The CPU 6 controls a tuner 2 for displaying a program selected by the operation unit 5, and controls a program-guide-image generating circuit 4 for generating a program guide image.

[0018]

A high-frequency signal from an unillustrated parabolic antenna is inputted to an input terminal 1. The signal inputted to the input terminal 1 is sent to the tuner 2. In the tuner, processing such as frequency conversion, QPSK demodulation and the like is effected, and a stream of digital video signals is generated. An output from the tuner 2 is sent to a video processing circuit 3.

[0019]

In the video processing circuit 3, the stream outputted from the tuner 2 is MPEG decoded, and an analog video signal for displaying on a display unit 8 such as a CRT, e.g., an NTSC signal, is generated. This video signal is sent to the display unit 8 through a multiplexer 7 so as to be displayed on the display unit 8.

[0020]

Moreover, in the video processing circuit 3, program guide information is extracted from the output from the tuner 2, and is supplied to the CPU 6. The program guide information supplied to the CPU 6 is stored in the storage device 9. Set screen information for displaying various set screens such as

a menu screen is stored in advance in the storage device 9, and information concerning programs which have been purchased (purchased programs) and the like are also stored therein.

[0021]

The program-guide-image generating circuit 4 has a display memory (not shown). In the program-guide-image generating circuit 4, various set images and program guide images are formed on the display memory on the basis of the set screen information, the program guide information, and the like which are stored in the storage device 9. Then, the images formed on the display memory are consecutively read, and are sent to the display unit 8 through the multiplexer 7 so as to be displayed on the display unit 8. On the basis of a control signal from the CPU 6, the multiplexer 7 selects one of the output from the video processing circuit 3 and the output from the program guide image generating circuit 4, and supplies it to the display unit 8.

[0022]

The operation unit 5 is provided with a menu key 11 for displaying the menu screen, four cursor movement keys 12L, 12R, 12U, and 12D for moving a cursor horizontally and vertically, a select key 13 for selecting and inputting, and the like. When the user wishes to view a program guide screen, it suffices that the user operates the menu key 11 to display the menu screen, and then selects a program guide by operating the cursor

movement keys 12L, 12R, 12U, and 120 and the select key 13.

[0023]

If a time-zone setting mode is selected on the menu screen, a time-zone setting screen is displayed for setting the time zone during which the user wishes to view the television program and so on, as shown in Fig. 2. If the user sets on the time-zone setting screen the starting time and the ending time of a time zone during which the user wishes to view television programs, and then selects an OK button, data on the starting time and the ending time of the time zone set by the user (hereafter, this data will be referred to as the time zone data) is stored in the storage device 9. In addition, the display screen is changed over from the time-zone setting screen to the menu screen.

[0024]

When the setting of the time zone has been made, the program guide screen is displayed so that the time zone set by the user and the other time zones can be discriminated from each other. For example, the region corresponding to the time zone set by the user and the region corresponding to the other time zones are displayed in different colors in the display region of the program guide screen, as shown in Fig. 3. Fig. 3 illustrates a case in which the time zone 12:00 to 24:00 has been set by the user.

[0025]

[2] Process for displaying the program guide screen

[0026]

A process for displaying the program guide screen will be described below. The program guide information sent to the receivaer includes guide information on the programs for all the channels from the present time to the time 24 hours ahead, for example. The program guide information on one program includes a title, its fee (rating) if the program is a PPV program, the category (sports, music, drama, news, etc.), the starting time, the ending time, and so on.

[0027]

The CPU 6 regards the guide information on the programs for all the channels as being two-dimensionally arranged information in which the channel numbers are set in the vertical direction and the time is set in the horizontal direction as shown on the upper side in Fig. 8, and the CPU 6 generates an index table which can be accessed by using the channel numbers and slot numbers indicating the time. The slot numbers are numbers which are allotted in units of 30 minutes, for example. Incidentally, the two-dimensionally arranged region E corresponding to the entire program guide information shown on the upper side in Fig. 8 will be referred to as an entire program guide region.

[0028]

If a program guide display is selected by the operation

unit 5, the CPU 6 generates a display table such as the one shown in Fig. 4 on the basis of the channel number selected immediately before then, the present time, and the index table. In Fig. 4, the program guide display information is stored in small regions (hereafter referred to as cells) in the region excluding the leftmost column. Accordingly, in this example, a display table corresponding to a 5 channels X 5cells portion (corresponding to two hours and a half) of the program guide is generated. The channel numbers (absolute channel numbers) or data on the station names corresponding to those channel numbers are stored in the cells in the leftmost column.

[0029]

In Fig. 4, x in (x, y) described as an index in each cell denotes a relative channel number (a relative channel number among the cells in the display table, and not an absolute channel number), and y denotes a relative slot number (a relative slot number among the slots in the display table, and not an absolute slot number). The program guide display information corresponding to the channel number selected immediately before then and the present time is stored in a second slot So from the left in an uppermost row (hereafter this cell will be referred to as a reference cell).

[0030]

The program guide display information stored in each cell includes a title, the number of exclusively occupied cells,

the rating, information representing whether or not the program has been purchased, the category, and so on. The number of exclusively occupied cells is the number of cells included from the current cell to the last cell of the program. Thefore, the number of cells is one if the current cell is the last one of the program. On the basis of the display table thus created, the program-guide-image generating circuit 4 generates on the display memory an image corresponding to the program guide screen such as the one shown on the lower side in Fig. 8. Then, as the image generated on the display memory is sent to the display unit 8, the program guide screen such as the one shown on the lower side in Fig. 8 is displayed on the display unit 8.

[0031]

Fig. 5 shows an overall procedure of processing which is executed by the CPU 6 and the program-guide-image generating circuit 4 in the case where the program guide is selected by the operation unit 5.

[0032]

When the program guide is selected by the operation unit 5, the channel number selected immediately before then and the present time are read, and the reference cell is set from the entire program guide region E. See Fig. 8.(Step 1).

[0033]

The display table shown in Fig. 2 is created on the basis

of the set reference cell and the index table (Step 2).

[0034]

Information in this display table is sent from the CPU 6 to the program-guide-image generating circuit 4. In the program-guide-image generating circuit 4, program-guide-image generation processing is effected on the basis of the sent information (Step 3). That is, a program guide image is generated on the display memory. As the program guide image generated on the display memory is consecutively read and sent to the display unit 8, a program guide screen is displayed on the display unit 8.

[0035]

When the time zone has been set by the user, the region corresponding to the time zone set by the user and the region corresponding to the other time zones are displayed in different colors in the display region of the program guide screen, as shown in Fig. 3. Then, the operation is set of waiting for a key input.

[0036]

When there has been a select key input by the select key 13 (YES in Step 4), predetermined selection processing such as the selection of a program, a reservation of a program, and the like is executed.

[0037]

When there has been a cursor key input by the cursor

movement keys 12L, 12R, 12U, and 12D (YES in Step 5), processing at Step 6, 7, or 9 is effected in correspondence with the operated cursor movement keys 12L, 12R, 12U, and 12D.

[0038]

In other words, if the operated key is the left movement key 12L, the operation proceeds to Step 6 to determine whether or not there has been a command for leftward movement from the left end of the entire program guide region E. If the operated key is the right movement key 12R, the operation proceeds to Step 7 to determine whether or not there has been a command for rightward movement from the right end of the entire program guide region E. If the operated key is the upward movement key 12U, the operation proceeds to Step 8 to determine whether or not there has been a command for upward movement from the upper end of the entire program guide region E. If the operated key is the downward movement key 12D, the operation proceeds to Step 9 to determine whether or not there has been a command for downward movement from the lower end of the entire program guide region E.

[0039]

The cursor cannot be moved if there has been a command for leftward movement from the left end of the entire program guide region E (YES in Step 6), if there has been a command for rightward movement from the right end of the entire program guide region E (YES in Step 7), if there has been a command

for upward movement from the upper end of the entire program guide region E (YES in Step 8), or if then has been a command for downward movement from the lower end of the entire program guide region E (YES in Step 9), that is, if the command is for movement to the outside direction of the entire program guide region. Hence, the operation returns to Step 4, and is set in a state of waiting for a key input.

[0040]

If the cursor movement command by the cursor key input is a movement command within the overall program guide area, the position of the destination of the cursor movement is calculated (Step 10). If the cursor movement command is a left or right movement command, the position of the destination of the cursor movement is calculated by supposing the amount of movement to be equal to one cell (slot) in the left or right direction. Then, a determination is made as to whether or not the position of the destination of the cursor movement is within the program guide screen being displayed on the display unit 8 (Step 11).

[0041]

If the position of the destination of the cursor movement is within the program guide screen being displayed on the display unit 8, the cursor image within the display memory is moved so that the cursor is displayed at the position of the destination of movement (Step 12).

[0042]

If the position of the destination of the cursor movement is outside the program guide screen being displayed on the display unit 8, the slot corresponding to the position of the destination of cursor movement is set as the reference cell to change (scroll) the program guide screen (Step 13). Then, the operation returns to Step 2. Accordingly, the display table shown in Fig. 2 is created on the basis of the newly set reference slot, and a new program guide screen is displayed on the display unit 8. Namely, the program guide screen is updated.

[0043]

Fig. 6 shows a detailed procedure of program-guide-image generation processing in Step 3 shown in Fig. 5, when the time zone has been set by the user.

[0044]

First, a frame image of a size corresponding to the number of its exclusively occupied cells is written in the display memory for each program within the display table (Step 21). Then, A variable SLOT NUM representing a respective slot number is set to one(Step 22).

[0045]

A determination is made as to whether or not the time zone corresponding to the presently set variable SLOT-NUM is included within the time zone set by the user, on the basis of the time zone data stored in the storage device 9(Step 23).

If it is determined that the time zone corresponding to the presently set the variable SLOT-NUM is not included within the time zone set by the user, color data representing a first color is written in the region of the time zone corresponding to the presently set variable SLOT-NUN in the inner regions of all the frames which have been written in the display memory (Step 24). Then, the operation proceeds to Step 26.

[0046]

In Step 23, if it is determined that the time zone corresponding to the presently set relative slot number SLOT-NUM is included within the time zone set by the user, color data representing a second color different from the first color is written in the region of the time zone corresponding to the presently set variable SLOT-NUN in the inner regions of all the frames which have been written in the display memory (Step 25). Then, the operation proceeds to Step 26.

[0047]

In Step 26, the variable SLOT-NUM is incremented by 1. That is, the variable SLOT-NUM is updated. Then, a determination is made as to whether or not the updated variable SLOT-NUM is greater than 5 (Step 27). If the updated variable SLOT-NUM is less than or equal to 5 (NO in Step 27), the operation returns to Step 23, and processing in Steps 23 to 26 is executed again with respect to the time zone corresponding to the updated variable SLOT-NUM. If processing in Steps 23 to 26 is thus

executed with respect to each of the relative slot numbers 1 to 5, YES is given as the answer in Step 27, and the operation proceeds to Step 28.

[0048]

In Step 28, a cursor image is written in the display memory. Subsequently, an image representing a title (title image) is written in each frame (Step 29), whereupon the program-guide-image generation processing ends.

[0049]

If the time zone has not been set by the user, the color data representing the same color is written in all the frames which have been written in the display memory in Step 21.

[0050]

The time zone during which the user wishes to view programs may be set for each day of the week. In the case where time zone during which the user wishes to view programs is set for each day of the week, a time zone setting screen such as the one shown in Fig. 7 is used. If the user sets on this time-zone setting screen the starting time and the ending time of the time zone during which the user wishes to view programs on each day of the week, and then selects the OK button, data on the starting time and the ending time of the time zone set for each day of the week (hereafter, this data will be referred to as the time zone data) is stored in the storage device 9. If the time zone during which the user wishes to view programs

has been set for each day of the week, the programs are classified by coloring on the basis of the time zone data for the present day of the week.

[0051]

Although in the above-described embodiment only one time zone is set for one day, a plurality of time zones may be set for one day.

[0052]

In the above-described embodiment, the region corresponding to the time zone set by the user and the region corresponding to the other time zones are displayed in different colors in the display region of the program guide screen. Accordingly, since the time zone which has been set by the user can be recognized at a glance, it is readily possible to effect the purchase by prescription or the like of PPV programs which are broadcast during that time zone.

[0053]

[Effect of the Invention]

According to this invention, as for a program guide on programs which are broadcast during the time zone set by the user, the user is able to recognize that the program guide is the program guide on programs which are broadcast during the time zone set by the user. Accordingly, it is readily possible to effect the purchase by prescription or the like of PPV programs which are broadcast during that time zone set by the

user.

[BRIEF DESCRIPTION OF THE DRAWINGS]

Fig. 1 is a block diagram showing a configuration of a user-side terminal.

Fig. 2 is a diagram illustrating an example of a time-zone setting screen.

Fig. 3 is a diagram illustrating an example of the program guide screen displayed in a case where a time zone has been set by the user.

Fig. 4 is a diagram illustrating a display table.

Fig. 5 is a flowchart illustrating an overall processing procedure for displaying a program guide screen.

Fig. 6 is a flowchart illustrating a detailed procedure of the program-guide-image generation processing which is executed in the case where the time zone has been set by the user.

Fig. 7 is a diagram illustrating another example of the time-zone setting screen.

Fig. 8 is a schematic view showing the program guide screen displayed in the user-side terminal with respect to DSS.

[Description of Reference Numerals and Signs]

2 Tuner

3 Video processing circuit

4 Program guide image generation circuit

5 Operation unit

6 CPU

7 Multiplexer

8 Display unit

9 Storage device

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[Name of Document] ABSTRACT

[Abstract]

[Object]

It is an object of the present invention is to provide a program-guide-display controlling apparatus and a television receiver in which as for a program guide on programs which are broadcast during the time zone set by the user, the user is able to recognize that the program guide is the program guide on programs which are broadcast during the time zone set by the user.

[Means to Achieve the Object]

A program-guide-display controlling apparatus for displaying a plurality of program guides on a display unit in a matrix form by using one of the ordinate and the abscissa as a channel number axis and another one as a time axis comprising setting means for allowing an arbitrary time zone to be set by a user, and discriminatingly displaying means for effecting display to discriminate the time zone set by the user and other time zones.

[Selected Drawing] Fig. 1

FIG. 1

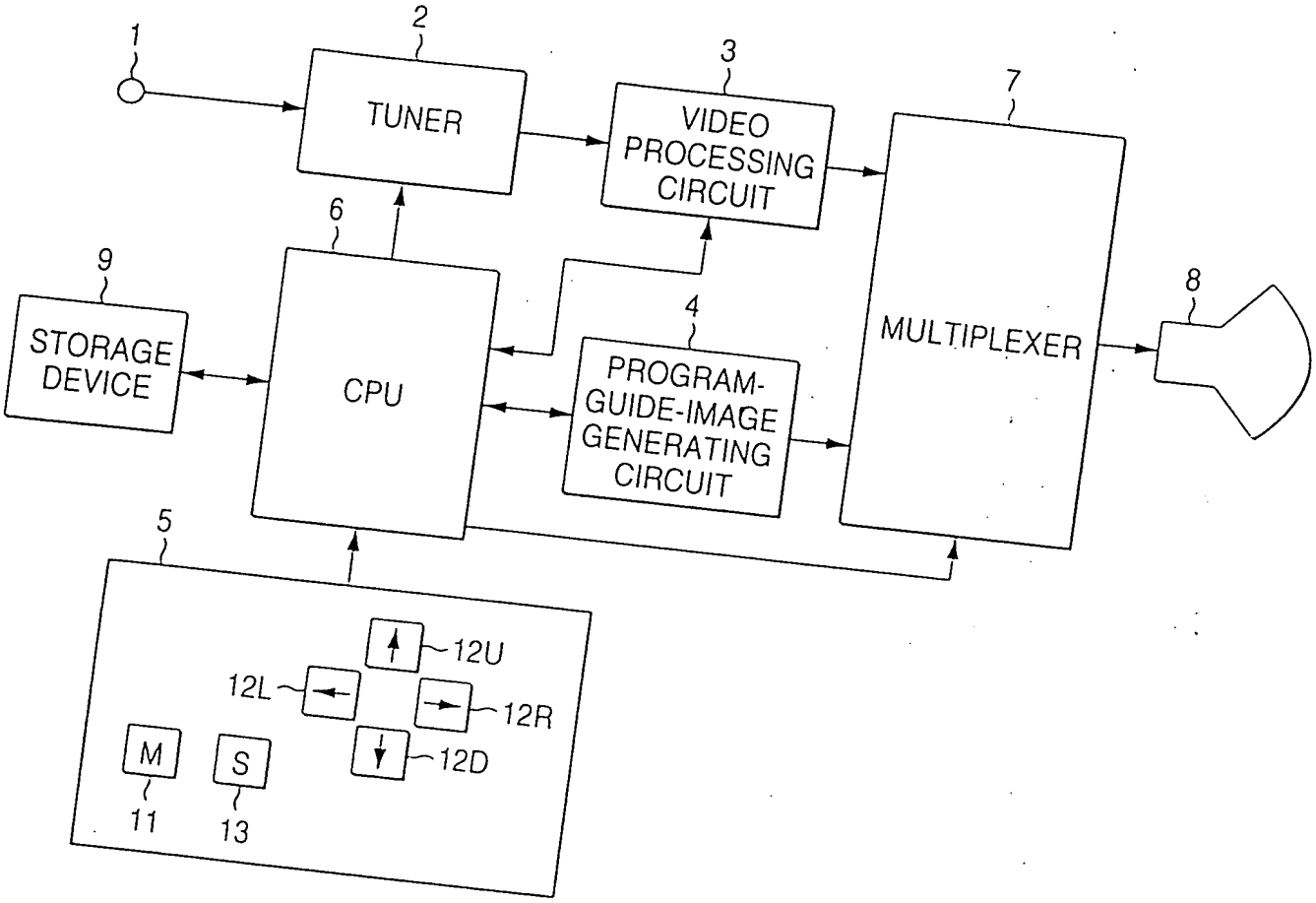

1
2
TUNER
3
VIDEO PROCESSING CIRCUIT
7
MULTIPLEXER
8
6
9
STORAGE DEVICE
CPU
4
PROGRAM-GUIDE-IMAGE GENERATING CIRCUIT
5
12U
12L
12R
12D
M
S
11
13

FIG. 2

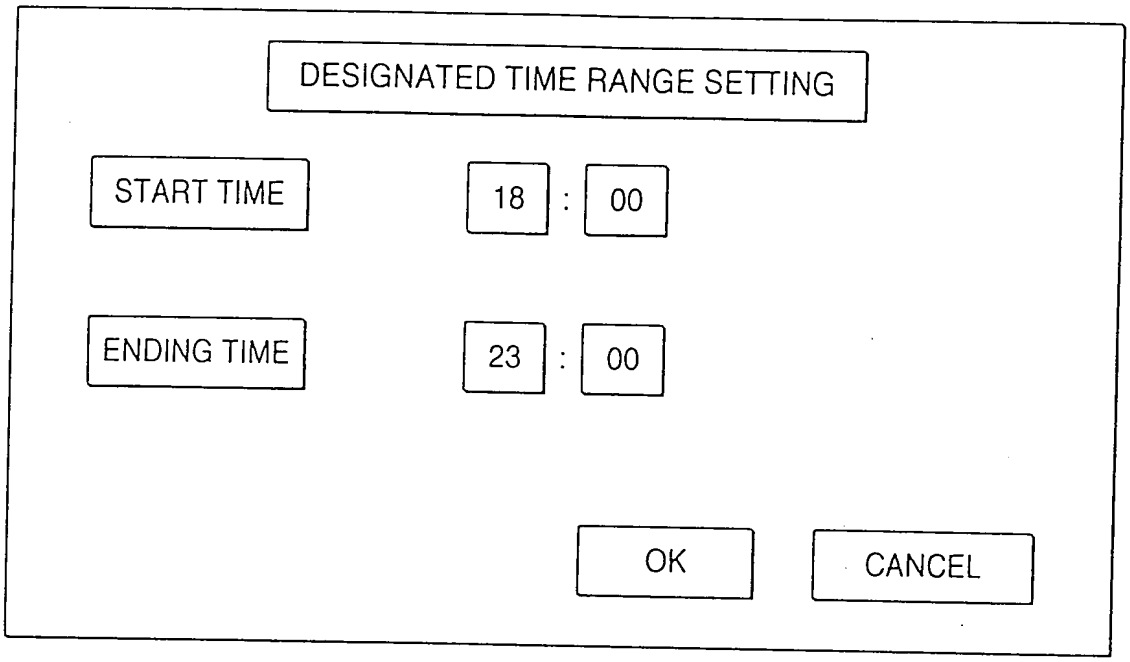

DESIGNATED TIME RANGE SETTING
START TIME
18 : 00
ENDING TIME
23 : 00
OK
CANCEL

FIG3

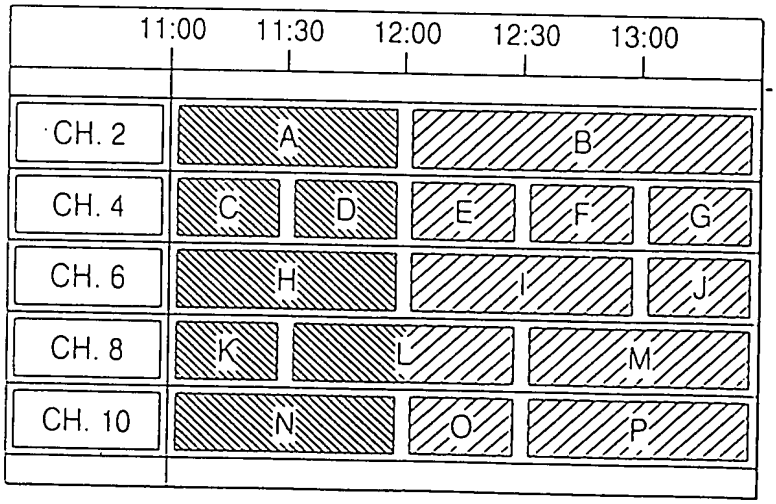

11:00
11:30
12:00
12:30
13:00
CH. 2
CH. 4
CH. 6
CH. 8
CH. 10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

FIG. 4

So

(1, 0)	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)
(2, 0)	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)
(3, 0)	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)
(4, 0)	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)
(5, 0)	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)

FIG. 5

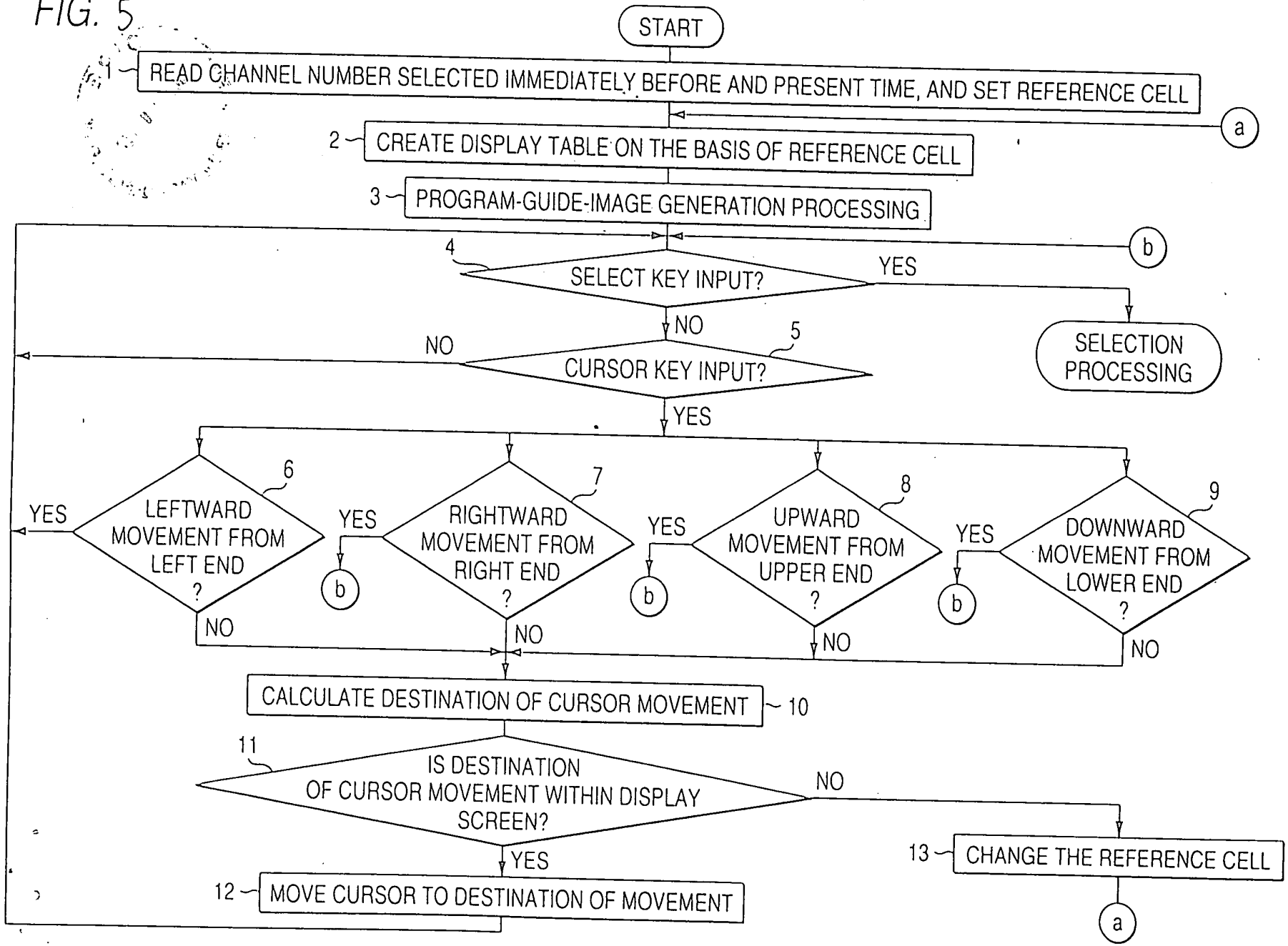

START
1
READ CHANNEL NUMBER SELECTED IMMEDIATELY BEFORE AND PRESENT TIME, AND SET REFERENCE CELL
a
2
CREATE DISPLAY TABLE ON THE BASIS OF REFERENCE CELL
3
PROGRAM-GUIDE-IMAGE GENERATION PROCESSING
b
4
SELECT KEY INPUT?
YES
SELECTION PROCESSING
NO
5
CURSOR KEY INPUT?
NO
YES
6
LEFTWARD MOVEMENT FROM LEFT END ?
YES
b
NO
7
RIGHTWARD MOVEMENT FROM RIGHT END ?
YES
b
NO
8
UPWARD MOVEMENT FROM UPPER END ?
YES
b
NO
9
DOWNWARD MOVEMENT FROM LOWER END ?
YES
b
NO
CALCULATE DESTINATION OF CURSOR MOVEMENT
10
11
IS DESTINATION OF CURSOR MOVEMENT WITHIN DISPLAY SCREEN?
NO
YES
12
MOVE CURSOR TO DESTINATION OF MOVEMENT
13
CHANGE THE REFERENCE CELL
a

FIG. 6

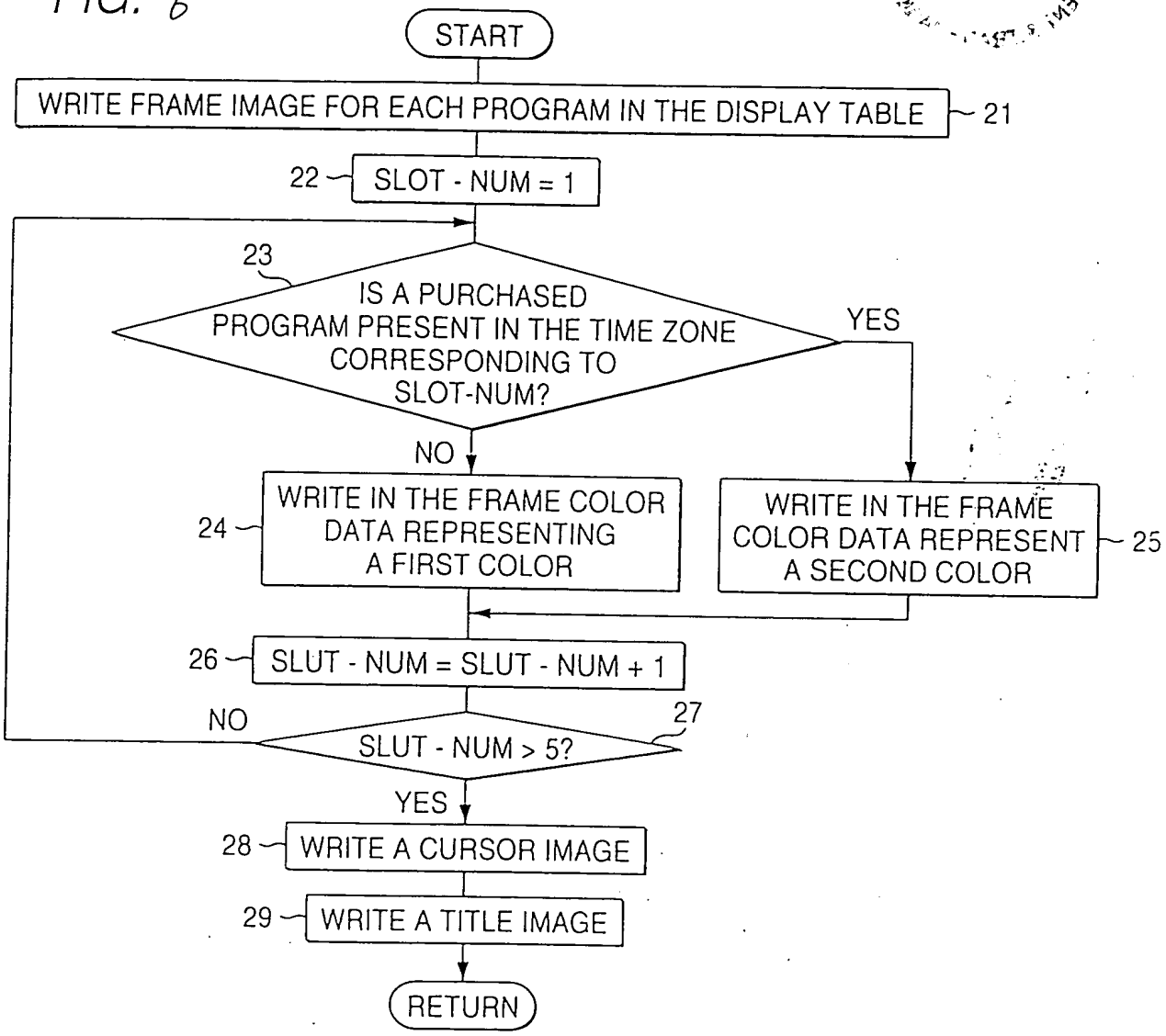

START
WRITE FRAME IMAGE FOR EACH PROGRAM IN THE DISPLAY TABLE
21
22
SLOT - NUM = 1
23
IS A PURCHASED PROGRAM PRESENT IN THE TIME ZONE CORRESPONDING TO SLOT-NUM?
YES
NO
24
WRITE IN THE FRAME COLOR DATA REPRESENTING A FIRST COLOR
WRITE IN THE FRAME COLOR DATA REPRESENT A SECOND COLOR
25
26
SLUT - NUM = SLUT - NUM + 1
NO
27
SLUT - NUM > 5?
YES
28
WRITE A CURSOR IMAGE
29
WRITE A TITLE IMAGE
RETURN

FIG. 5

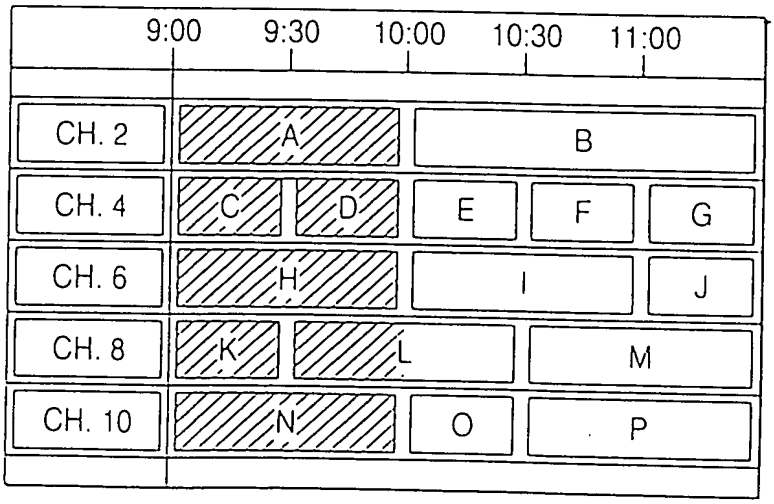

9:00
9:30
10:00
10:30
11:00
CH. 2
A
B
CH. 4
C
D
E
F
G
CH. 6
H
I
J
CH. 8
K
L
M
CH. 10
N
O
P

FIG. 7

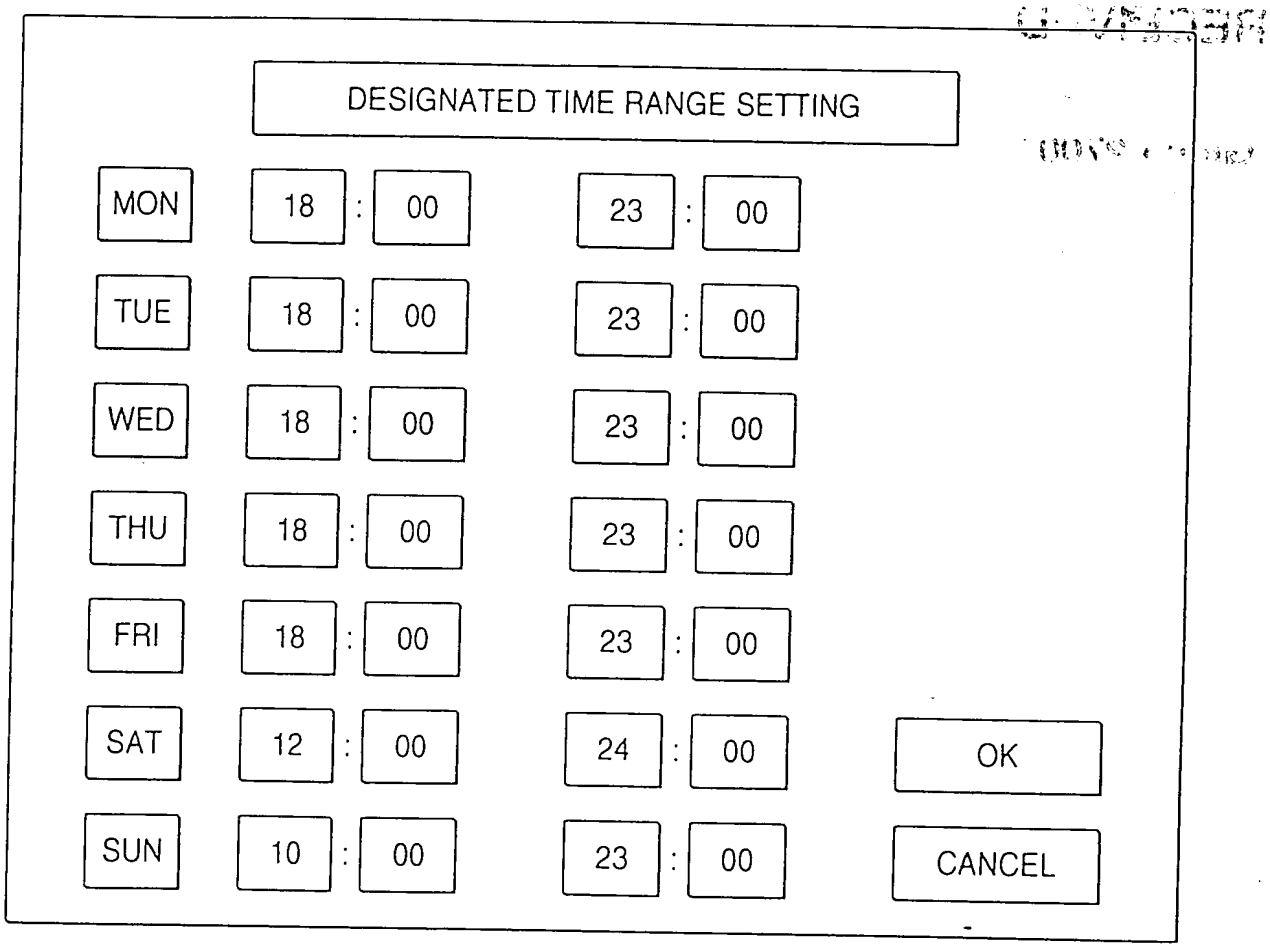
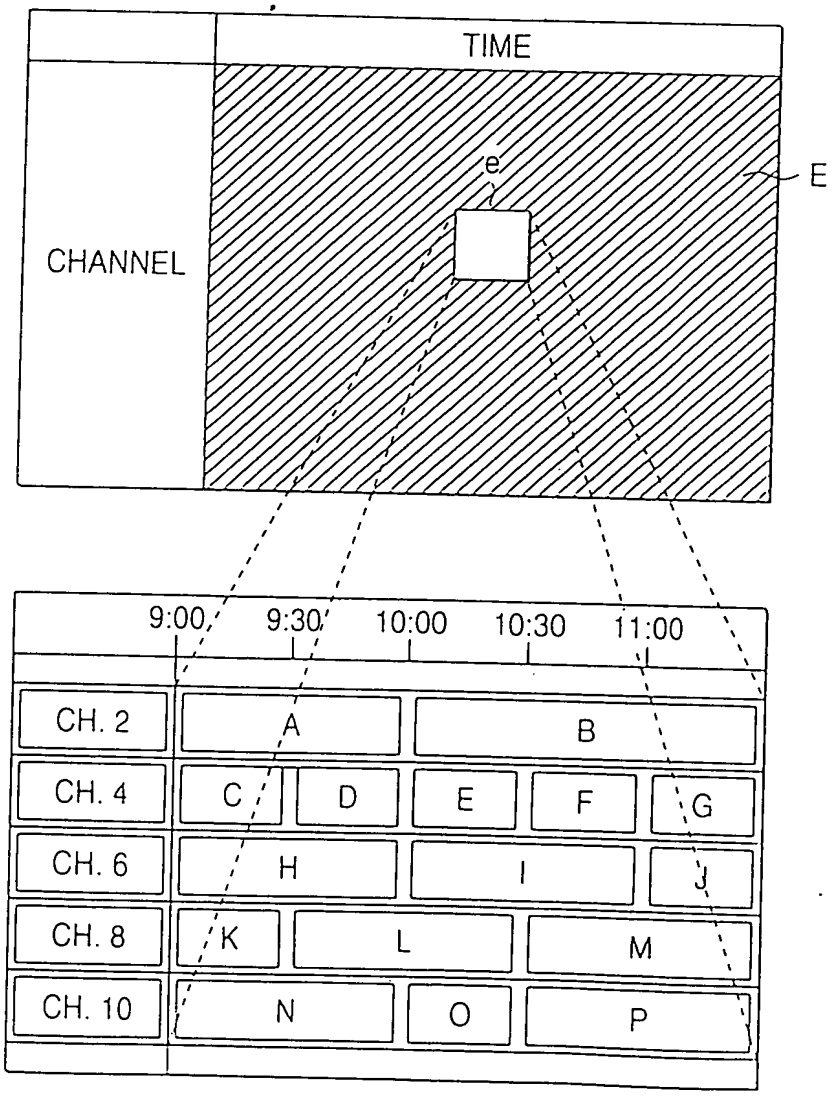

DESIGNATED TIME RANGE SETTING
MON
18 : 00
23 : 00
TUE
18 : 00
23 : 00
WED
18 : 00
23 : 00
THU
18 : 00
23 : 00
FRI
18 : 00
23 : 00
SAT
12 : 00
24 : 00
SUN
10 : 00
23 : 00
OK
CANCEL

FIG. 8


TIME
CHANNEL
e
E
9:00
9:30
10:00
10:30
11:00
CH. 2
A
B
CH. 4
C
D
E
F
G
CH. 6
H
I
J
CH. 8
K
L
M
CH. 10
N
O
P